



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/367,630	08/19/99	SAITO	3045-1222

LM31/0829

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EXAMINER

AHMED, S

ART UNIT

PAPER NUMBER

2723

DATE MAILED: 08/29/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/367630

Applicant(s)

Yoshihiro SAITO et al.

Examiner

S. Ahmed

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-10 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-10 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 3
- ☒ Notice of References Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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Claims

1. Claims 1, and 6 are objected to because of the following informalities:

claim 1, lines 6-7, "the above-described locking mechanism" should be changed to -- said locking mechanism--, lines 8-9, "a memory devices that stores registered fingerprint code data) should be changed to--a memory device that stores registered fingerprint code data-- and lines 14-15, " the above-mentioned movement restricting mechanism" should be changed to -- said movement restricting mechanism--.

Claim 6, lines 2-3, "the concerned object" should be changed to -- a concerned object --, and line 9 , " the above-mentioned switch" should be changed to-- said switch--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitation "the object" in line 3 and the limitation "the concerned object" in line 6. There is insufficient antecedent basis for these limitations in the claim. It is not clear whether "the object" and "the concerned object" are the same object or two different objects.

5. Claim 2 recites the limitation "the key unit" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 3-5 depend from claim 2.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over H. V. Williams et al (U.S. Patent 3,201,961) in view of the combination of Gokcebay (U.S. Patent 5,337,043) and Tamori (U.S. Patent 5,503,029).

As to claim 1 (as best understood by the Examiner), Williams discloses a lock (Fig.2, item 5, col. 2, lines 51-61) in which an optical sensor (Fig. 1, item 10, col. 3, lines 12-16) is used and which is equipped with a locking mechanism [a latch bolt 5 extending between jamb 3 and door 1 (Fig. 2, items 5, 3, col. 2, lines 62-64)] that restricts the movement of the object [to hold door 1 against opening movement (Fig. 2, item 1, col. 3, lines 62-64)] that is to be unlocked , a movement restricting mechanism or a movement restricting electronic circuit that restricts the unlocking of the concerned object by the above-described locking mechanism [latch bolt 5 extending between jamb 3 and door 1 to hold the latter against opening movement. Bolt 5 is adapted to be retracted into a jamb 3 upon energization of a coil 6 (movement restricting

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electronic circuit) (col. 2, lines 62-67, col. 3, lines 4-7)], an optical fingerprint sensor that detects the fingerprint pattern (col.3, lines 12-26, and lines 39-50), a memory device that stores registered fingerprint code data [a master or reference print 23 on a transparency (which is broadly a memory storing the registered fingerprint) (col. 3, lines 26-33)], a matching unit that determines whether the fingerprint code created from the fingerprint pattern sensed by the sensor matches with any of the registered fingerprint codes stored in the memory device (col. 6, lines 38-57), and a control unit that unlocks the locking mechanism through the above-mentioned movement restricting mechanism or electronic circuit, when the offered and a registered fingerprint codes match (col. 3, lines 8-12, col. 4, lines 61-71).

Williams discloses a transparency that stores the master or reference print 23 (reference fingerprint) and is scanned by a master photocell 26 (col. 3, lines 26-33) and an optical scanner to detect the fingertip pattern (fingerprint) (col. 3, lines 12-14, Figs, 4, 5, and 6). Williams does not disclose a conventional electronic memory (such as a digital, magnetic etc) that stores the registered finger print, also does not disclose a pressure-based fingerprint sensor. However using a conventional memory device to store registered fingerprints for authentication of a user in an access control system is well-known in the art as evidenced by Gokcebay.

Gokcebay discloses a high security access control system involving credit card type keys or mechanical keys and locks as well as keyholder authentication to prevent unauthorized use of the key. A card type key (electronic, magnetic, etc.) carries encoded data which represent a personal feature of the intended keyholder assigned to that key, such as a fingerprint (a memory

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device that stores registered fingerprint code data). The data may be read by swiping it through a reader slot. The information as read is briefly stored in a memory associated with a small processor connected to the key reader. The keyholder may then be prompted to place a selected finger against a fingerprint reader. The fingerprint reader scans the fingerprint, and this scanned information is compared with the encoded information. If the actual fingerprint as read matches the fingerprint as encoded and stored on the key, the keyholder is granted access (col. 2, lines 5-64). The card type key is used for access control of a door with a lock (see Figs 1, and 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Gokcebay's teachings to modify Williams's lock by using a card type key that stores the fingerprint of the keyholder (a portable memory device that is easily used to store and make changes to registered fingerprint code data) in order to achieve on site authentication comparison made directly at the access control point, and no fingerprint data required to be imported from a central memory which simplifies and speeds up the system, to provide high security access control based on a personal feature (such as a fingerprint) of the intended keyholder assigned to that key that can be adjusted or can be canceled for certain personnel (such as discharged employees) (col. 3, lines 16-42). Gokcebay does not disclose a pressure-based fingerprint sensor. Tamori discloses an inexpensive surface pressure fingerprint sensor that is capable of accurately detecting the small surface variations necessary for mapping the contour of a fingertip and is not susceptible to the effects of greasiness of the fingertip, moisture (sweat or the like) compared to other conventional fingerprint sensors (col. 1, lines 27-67). One skilled in the art would have clearly recognized that

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the optical fingerprint sensor of the combined device of Williams and Gokcebay would have been bulky, expensive and sensitive to the effects of greasiness of the fingertip, moisture (sweat or the like) that would have compromised the accuracy of the detected fingerprint. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a pressure-based fingerprint sensor in the combined device of Williams and Gokcebay as taught by Tamori in order to achieve a small size, inexpensive surface pressure fingerprint sensor that is capable of accurately detecting the small surface variations necessary for mapping the contour of a fingertip and is not susceptible to the effects of greasiness of the fingertip, moisture (sweat or the like) compared to other conventional fingerprint sensors (col. 1, lines 27-67).

As to claim 2, Gokcebay further discloses a lock in which the key unit and the lock part are separated and the key unit is portable (see Figs 2, 3, col. 6, lines 4-15, col. 7, lines 19-27).

As to claim 3, Gokcebay further discloses a lock in which the portable unit is a card (col. 2, lines 5-11, Figs 10 and 11).

As to claim 4, Gokcebay further discloses, a separated type lock in which the registered fingerprint codes are stored in the portable unit [the fingerprint of the keyholder is encoded and stored on the card type key (col. 2, lines 5-16)] and the matching unit resides in the lock part [the processor that compares the keyholder's fingerprint against the encoded stored fingerprint on the key, resides in the lock part of the door (col. 2, lines 47-57, col. 9, line 63-col. 10, line 10 and Fig. 4, processor 46, electric strike 45)], and where the fingerprint sensor is included in the lock part

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of the door [a fingerprint reader window is included in the lock part (col. 7, lines 20-25, Fig. 3, item 25).

As to claim 6, Williams discloses a switching system (Fig.2, items 6 and 108, col. 3, lines 4-12) having an optical fingerprint sensor (Fig. 1, item 10, col. 3, lines 12-16) that is equipped with a switch (Fig.2, item 108) that starts a concerned object [the control system is responsive to a fingertip pattern and closing switch 108 when the fingerprint matches a reference fingerprint (col. 3, lines 8-12), coil 6 is energized when switch 108 is closed and thereby retracts bolt 5 and releases the door (a concerned object) to be opened (col. 2, lines 62-69, col. 3, lines 4-7, Fig 2, items 1, 5, 6, and 108)], an optical fingerprint sensor that detects the fingerprint pattern (col.3, lines 12-26, and lines 39-50), a memory device that stores the registered fingerprint codes [a master or reference print 23 on a transparency (which is broadly a memory storing the registered fingerprint) (col. 3, lines 26-33)], a matching unit that determines whether the fingerprint code created from the fingerprint pattern detected by the sensor matches with a stored fingerprint code (col. 6, lines 38-57), and a control unit that operates the above-mentioned switch when there is a match (col. 3, lines 8-12, col. 4, lines 61-71).

Williams discloses a transparency that stores the master or reference print 23 (reference fingerprint) and is scanned by a master photocell 26 (col. 3, lines 26-33) and an optical scanner to detect the fingertip pattern (fingerprint) (col. 3, lines 12-14, Figs, 4, 5, and 6). Williams does not disclose a conventional electronic memory (such as a digital, magnetic etc) that stores the registered finger print, also does not disclose a pressure-based fingerprint sensor. However using

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a conventional memory device to store registered fingerprints for authentication of a user in an access control system is well-known in the art as evidenced by Gokcebay.

Gokcebay discloses a high security access control system involving credit card type keys or mechanical keys and locks as well as keyholder authentication to prevent unauthorized use of the key. A card type key (electronic, magnetic, etc.) carries encoded data which represent a personal feature of the intended keyholder assigned to that key, such as a fingerprint (a memory device that stores registered fingerprint code data). The data may be read by swiping it through a reader slot. The information as read is briefly stored in a memory associated with a small processor connected to the key reader. The keyholder may then be prompted to place a selected finger against a fingerprint reader. The fingerprint reader scans the fingerprint, and this scanned information is compared with the encoded information. If the actual fingerprint as read matches the fingerprint as encoded and stored on the key, the keyholder is granted access (col. 2, lines 5-64). The card type key is used for access control of a door with a lock (see Figs 1, and 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Gokcebay's teachings to modify Williams's lock by using a card type key that stores the fingerprint of the keyholder (a portable memory device that is easily used to store and make changes to registered fingerprint code data) in order to achieve on site authentication comparison made directly at the access control point, and no fingerprint data required to be imported from a central memory which simplifies and speeds up the system, to provide high security access control based on a personal feature (such as a fingerprint) of the intended keyholder assigned to that key

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that can be adjusted or can be canceled for certain personnel (such as discharged employees) (col. 3, lines 16-42). Gokcebay does not disclose a pressure-based fingerprint sensor. Tamori discloses an inexpensive surface pressure fingerprint sensor that is capable of accurately detecting the small surface variations necessary for mapping the contour of a fingertip and is not susceptible to the effects of greasiness of the fingertip, moisture (sweat or the like) compared to other conventional fingerprint sensors (col. 1, lines 27-67). One skilled in the art would have clearly recognized that the optical fingerprint sensor of the combined device of Williams and Gokcebay would have been bulky, expensive and sensitive to the effects of greasiness of the fingertip, moisture (sweat or the like) that would have compromised the accuracy of the detected fingerprint. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a pressure-based fingerprint sensor in the combined device of Williams and Gokcebay as taught by Tamori in order to achieve a small size, inexpensive surface pressure fingerprint sensor that is capable of accurately detecting the small surface variations necessary for mapping the contour of a fingertip and is not susceptible to the effects of greasiness of the fingertip, moisture (sweat or the like) compared to other conventional fingerprint sensors (col. 1, lines 27-67).

As to claim 7, Williams further discloses, the fingerprint sensor and the switch that starts the concerned object are separated [as shown in Fig. 2, the switch 108 even it is part of the locking mechanism that releases the door 1 it is not physically integrated (i.e. separated) with the

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fingerprint scanner shown in Fig. 6] and Gokcebay further discloses the memory device reside on a portable unit (see Figs 2, 3, col. 6, lines 4-15, col. 7, lines 19-27).

As to claim 8, Gokcebay further discloses a portable unit is in the shape of a card (col. 2, lines 5-11, Figs 10 and 11).

As to claim 9, Williams further discloses, both the registered codes [the master or reference fingerprint transparency (col. 3, lines 27-30)] and the matching unit [means for comparing the test fingerprint and the master fingerprint (col. 3, 9-11)] reside in the switch part [the switch part is the part that is not portable and it includes the switch, the control system which provides means for comparing the test fingerprint and the master fingerprint (col. 3, 9-11), and the fingerprint scanning unit 10 which houses the reference fingerprint transparency (Fig. 6, transparency 23 positioned in a pocket 24 and scanned (read) by photocell 26) because non of them is portable], and where the fingerprint sensor [the optical fingerprint sensor is housed in the scanning unit (see Fig. 6, photocell 26' scans the finger)] is included in the switch part.

8. Claims 5, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over H. V. Williams et al (U.S. Patent 3,201,961) in view of the combination of Gokcebay (U.S. Patent 5,337,043) and Tamori (U.S. Patent 5,503,029) as applied to claims 2 and 7 above and further in view of Cockburn (U.S. Patent 5,055,658).

As to claim 5, Gokcebay discloses the card type key (portable part) can connect to the separated lock part in order to transfer the fingerprint data of the keyholder stored on the card type key by placing the key against a reader or by swiping through a slot (col. 6, lines 9-14), or by

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insertion into a slot where a laser diode reads the encoded data (see Fig. 6). Gokcebay does not explicitly disclose, the separated lock part and portable unit can be connected either electrically through a connector, by wireless, through an infra red beam, by magnetic coupling, or by static electricity.

Cockburn discloses a security system including a security lock which recognizes a specified slave key. The slave key is provided with a window 7, contains electronic means for digitizing the pattern of ridges on the surface of the holder's thumb (fingerprint), and electrical contacts 9, 10 provided in the blade 5 of the key allow the digital data produced to be passed to the computing means in the locking device [i.e. the separated lock part and portable unit can be connected electrically through a connector] (col. 2, lines 10-18, lines 36-40, and Fig.1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Cockburn's teachings to modify the combined lock of Williams, Gokcebay and Tamori by using a conventional electrical coupling means (electrical contacts provided in the blade of the key) which is simpler and less expensive than an optical or magnetic key reader in order to connect the computing means in the locking device to the key, so that the fingerprint information carried by the key is transferred to the computing means in the locking device which upon recognizing the fingerprint information based on a pre-stored user's fingerprint information, thereby actuate the locking device (see col. 2, lines 36-44).

As to claim 10, Gokcebay discloses the card type key (portable part) can connect to the separated lock part in order to transfer the fingerprint data of the keyholder stored on the card

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type key by placing the key against a reader or by swiping through a slot (col. 6, lines 9-14), or by insertion into a slot where a laser diode reads the encoded data (see Fig. 6). Gokcebay does not explicitly disclose, the separated switch part and portable unit can be connected either electrically through a connector, by wireless, through an infra red beam, by magnetic coupling, or by static electricity.

Cockburn discloses a security system including a security lock which recognizes a specified slave key which is operable by the key holder himself. The system can be used to control access to a building or motor car ignition control (ignition switch) by authorized personnel (abstract). The slave key is provided with a window 7, contains electronic means for digitizing the pattern of ridges on the surface of the holder's thumb (fingerprint), and electrical contacts 9, 10 provided in the blade 5 of the key allow the digital data produced to be passed to the computing means in the locking device [i.e. the separated lock part and portable unit can be connected electrically through a connector] (col. 2, lines 10-18, lines 36-40, and Fig.1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Cockburn's teachings to modify the combined lock of Williams, Gokcebay and Tamori by using a conventional electrical coupling means (electrical contacts provided in the blade of the key) which is simpler and less expensive than an optical or magnetic key reader in order to connect the computing means in the switch locking device to the key, so that the fingerprint information carried by the key is transferred to the computing means in the switch locking device which upon

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recognizing the fingerprint information based on a pre-stored user's fingerprint information, thereby actuate the switch locking device (see col. 2, lines 36-44).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following reference was cited to show state of the art to hardware implementations of fingerprint sensors:

U.S. patent 6,100,811 to Hsu et al.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Samir Ahmed whose telephone number is (703) 305-9870. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Au, Amelia can be reached on (703) 308-6604. The fax phone number for this Group is (703) 306-5406.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

SA

8/23/00

SAMIR AHMED
PATENT EXAMINER

